# JOURNAL OF APPLIED CARDIOLOGY

CONTENTS/AUTHOR INDEX
Volume 5, 1990

PERGAMON PRESS

New York • Oxford • Beijing • Frankfurt • São Paulo • Sydney • Tokyo • Toronto

# JOURNAL OF APPLIED CARDIOLOGY


*Editor-in-Chief*
**Richard J. Bing, M.D.**
Director, Experimental Cardiology
Huntington Medical Research Institutes
Pasadena, California

*Editors*
**Richard C. Pasternak, M.D.**
Beth Israel Hospital
Harvard University
Boston, Massachusetts

**Heinrich Taegtmeyer, M.D., D.Phil.**
University of Texas Health Science Center
Houston, Texas

*Co-Editors*
**Michael Crawford, M.D.**
Chief, Division of Cardiology
University of New Mexico
Albuquerque, New Mexico

**Robert Gibson, M.D.**
Professor of Internal Medicine
Department of Cardiology
University of Virginia
Charlottesville, Virginia

**William A. Littler, M.D.**
British Heart Foundation
Chair of Cardiovascular Medicine
University of Birmingham
Birmingham, UK

*Editorial Board*

**Joseph S. Alpert**
Univ. of Massachusetts Medical School
Worcester, MA

**D. Eberhard Bassenge**
Albert Ludwigs Universität
Freiburg, FR Germany

**M. G. Bourassa**
Montreal Heart Institute
Montreal, Canada

**David S. Cannom**
The Hospital of the Good Samaritan
Los Angeles, CA

**Ernesto Carafoli**
Eidenossische Techn Hochschule
Zurich, Switzerland

**Britton Chance**
Univ. of Penn. School of Medicine
Philadelphia, PA

**Rene Gourgon**
Hopitaux de Paris
Paris, France

**Naranjan S. Dhalla**
St. Boniface Research Centre
Winnipeg, Manitoba, Canada

**M. Endo**
Univ. of Tokyo
Tokyo, Japan

**Harry A. Fozzard**
Univ. of Chicago
Chicago, IL

**William Ganz**
Cedars-Sinai Medical Center
Los Angeles, CA

**Edgar Haber**
Massachusetts General Hospital
Boston, MA

**G. Hellige**
Georg-August-Universität
Göttingen, FR Germany

**Robert B. Jennings**
Duke Univ. Medical Center
Durham, NC

**Arnold M. Katz**
Univ. of Connecticut Health Ctr.
Farmington, CT

**Harold Kennedy**
St. Louis University Medical School
St. Louis, MO

**Paul R. Lichtlen**
Medizinische Hochschule
Hannover, FR Germany

**Yukio Maruyama**
Fukushima Medical College
Fukushima, Japan

**Dan G. McNamara**
Texas Children's Hospital
Houston, TX

**Winifred Nayler**
Melbourne Univ.
Victoria, Australia

**Lionel H. Opie**
Univ. of Cape Town
Cape Town, South Africa

**George K. Radda**
Univ. of Oxford
Oxford, England

**Brian Ross**
Huntington Medical Research Institutes
Pasadena, CA

**John Ross, Jr.**
Univ. of California at San Diego
La Jolla, CA

**Wolfgang Schaper**
Max-Planck-Institut
Bad Nauheim, FR Germany

**Alexander Scriabine**
Miles Laboratory
West Haven, CT

**Nick Sperelakis**
Univ. of Cincinnati Medical Ctr.
Cincinnati, OH

**Edward Brad Stinson**
Stanford Univ. School of Medicine
Palo Alto, CA

**Michihiko Tada**
Osaka University School of Medicine
Osaka, Japan

**Tamotsu Takishima**
Tohoku University School of Medicine
Sendai, Japan

*Associate Editors*

**John Baldwin,** USA
**Laurence L. Brunton,** USA
**Harold T. Dodge,** USA
**Roberto Ferrari,** Italy
**Charles Fisch,** USA
**Gottlieb C. Friesinger,** USA
**Valentin Fuster,** USA
**S. Gudbjarnason,** Iceland
**Kinji Ishikawa,** Japan
**Thomas N. James,** USA
**W. Kubler,** FR Germany
**Yukio Maruyama,** Japan
**Wilfried Mommaerts,** USA
**Ferid Murad,** USA
**Robert A. O'Rourke,** USA
**John O. Parker,** Canada
**David C. Sabiston, Jr.,** USA
**Michael Safer,** France
**Kern Wildenthal,** USA



**Editorial Office:** Richard J. Bing, MD, Journal of Applied Cardiology, Huntington Memorial Hospital, 100 Congress Street, Pasadena, CA 91105, USA. Tel: (818) 397-5451. Editorial Assistant: Linda DeChaine.

**Publishing, Subscription and Advertising Offices:** Pergamon Press, Inc., Fairview Park, Elmsford, NY 10523, USA; or Pergamon Press plc, Headington Hill Hall, Oxford, OX3 0BW, England.

**Published Bimonthly:** Annual institutional subscription rate (1991); US$200.00. Two-year institutional subscription rate (1991/92); US$380.00. Professional subscription rate (1990); US$50.00. Prices are subject to change without notice. Notify 8 weeks in advance of address change with a copy of the subscription mailing label.

**Back Issues:** Back issues of all previously published volumes, in both hard copy and on microform, are available direct from Pergamon Press offices.



**Copyright © 1990 Pergamon Press plc**

It is a condition of publication that manuscripts submitted to this journal have not been published and will not be simultaneously submitted or published elsewhere. By submitting a manuscript, the authors agree that the copyright for their article is transferred to the publisher if and when the article is accepted for publication. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform or any other reproductions of similar nature and translations. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, electrostatic, magnetic tape, mechanical, photocopying, recording or otherwise, without permission in writing from the copyright holder.

*Photocopying information for users in the U.S.A.* The Item-Fee Code for this publication indicates that authorization to photocopy items for internal or personal use is granted by the copyright holder for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service provided the stated fee for copying, beyond that permitted by Section 107 or 108 of the United States Copyright Law, is paid. The appropriate remittance of $3.00 per copy per article is paid directly to the Copyright Clearance Center Inc., 27 Congress Street, Salem, MA 01970.

*Permission for other use.* The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for copying. Please contact the Subsidiary Rights Manager, at either Pergamon Press, Inc., or Pergamon Press plc.



*The Item-Fee Code for this publication is* 0883-2935/90 $3.00 + .00

Printed in the U.S.A.

♾™ The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

*Journal of Applied Cardiology*, Vol. 5, pp. 483–491, 1990
Printed in the USA. All rights reserved.

0883-2935/90 $3.00 + .00
Copyright © 1990 Pergamon Press plc

# JOURNAL OF APPLIED CARDIOLOGY

Volume 5, Number 1 1990

Contents


| | | |
|---|---|---|
| **H. Taegtmeyer** | 1 | Editorial Note |
| **Y. Sasaki**<br>**H. Yabana**<br>**T. Nagao**<br>**S. Takeyama** | 3 | Compartmentalized Evaluation of Cyclic-AMP by Denopamine in the Isolated Perfused Guinea-Pig Heart |
| **S. Gudbjarnason** | 13 | What Is the Function of Docosahexaenoic Acid in Heart Muscle Membranes? |
| **W. G. Bigelow** | 23 | Research and Surgery Close to the Heart: Recollections on Richard Bing |
| **J. N. W. West**<br>**S. B. Dimmitt**<br>**M. S. Salih**<br>**W. A. Littler** | 25 | Analysis of Patterns of Arterial Doppler Ultrasound Velocity During Valsava's Maneuvre: A Diagnostic Role in Autonomic Neuropathy |
| **H. Niestegge**<br>**G. Bluemchen** | 33 | Tolerance Development During Continuous Infusion of Nitroglycerin (NTG) and Overview on Tolerance During Oral and Transdermal Long-Term Therapy with Organic Nitrates |
| **M. D. Osbakken**<br>**J. Pigott**<br>**L. Ligeti**<br>**C. Duska**<br>**I. Ponomarenko**<br>**B. Chance** | 39 | Myocardial Bioenergetics of Chronic Volume Overload Studied with $^{31}P$ MRS |

**A. Chester**
**M. Bodelsson**
**B. Arneklo-Nobin**
**S. Tadjkarimi**
**K. Tornebrandt**
**M. Yacoub**
51 Characterization of 5-HT Receptors in the Human Saphenous Vein, Implications for Patency of Bypass Grafts

**J. J. Ferguson III**
**W. J. Manning**
**S. E. Warren**
**J. Y. Wei**
61 The Filling Rate Integral: A Noninvasive Index of Diastolic Function Normalized for Heart Rate and Chamber Volume

**M. E. Safar**
69 Antihypertensive Effects of Nitrates in Chronic Human Hypertension

**S. C. Sommers**
83 Author, Editor, Publisher

87 *Erratum*

---

Volume 5, Number 2 1990

Contents

**K. Yano**
**M. Mori**
**Y. Matsumoto**
**M. Hirata**
**T. Hirata**
**T. Mitsuoka**
**K. Hashiba**
89 Late-Phase Electrical Instability of the Canine Heart with Reperfusion After 2 and 5 Hours of Coronary Occlusion

**M. Keitoku**
**H. Okayama**
**Y. Satoh**
**Y. Maruyama**
**T. Takishima**
101 Supersensitivity to Histamine in Early Atherosclerotic Human Coronary Arteries: Intimal Thickening Attenuates Endothelium-Dependent Relaxation

**A. S. Manolis**
**T. H. Elmquist**
115 Coronary Arteriography and Revascularization in Patients with Intra-Aortic Balloon Pump Support

**P. J. Maguire**
**P. A. Edwards**
**F. W. Mayer**
**J. H. Oury**
**W. W. Angell**
133 Influence of Fixation Pressure on the Clinical Durability of the Porcine Xenograft

**T. A. Kelly**
**R. M. Rothbart**
**V. J. Patrone**
**D. D. Watson**
**A. Weltman**
**R. S. Gibson**
141 Continuous Wave Doppler Assessment of Ascending Aortic Blood Flow During Exercise in Normal Volunteers and Patients with Suspected or Known Coronary Artery Disease

**H-H. Erlemeier**
**W. Kupper**
**W. Bleifeld**
159 Hemodynamic and Humoral Effects of Xamoterol During Acute and Long-Term Therapy with Regard to Left Ventricular Function After Xamoterol

**C. Guarnieri**
**C. Muscari**
**C. M. Caldarera**
173 Mitochondrial Function and Superoxide Radical Production in the Rabbit Heart Muscle After Mild or Acute Aortic Stenosis

---

Volume 5, Number 3 1990

Contents

**G. L. Freeman**
**J. R. Haywood**
181 The Influence of Captopril on Cardiac Morphology in Normal Rats

**H. Yanagisawa**
193 A Case of Mitral Stenosis with Mitral Obstruction by a Left Atrial Thrombus

**A. Lochner**
**R. Mouton**
**I. Harper**
199 Effects of Lysophosphatidylcholine on Myocardial Membranes: Alterations in Sarcolemmal Permeability and Microviscosity

**M. Seigneur**
**J. Bonnet**
**B. Dorian**
**D. Benchimol**
**F. Drouillet**
**G. Gouverneur**
**J. Larrue**
**R. Crockett**
**M-R. Boisseau**
**P. Ribereau-Gayon**
**H. Bricaud**
215 Effect of the Consumption of Alcohol, White Wine, and Red Wine on Platelet Function and Serum Lipids

**C. M. R. Deally**
**P. K. Singal**
223 Susceptibility to Adriamycin-Induced Cardiotoxicity Increases Only Up to Certain Age

**D. K. Arnett**
**S. P. Glasser**
239 The Risk Factor Profile for Patients with Asymptomatic Myocardial Ischemia

**M. R. Fisher**
245 An Overview of Magnetic Resonance for Evaluation of the Heart

**G. Fiorini**
**L. Prina**
**C. de Ponti**
255 Dipyridamole-Echocardiography Test in Recent Non-Q-Wave Myocardial Infarction

---

Volume 5, Number 4 1990

Contents

**S. E. Leeds**
265 Recollections on the History of Cardiac Surgery: The Artificial Patent Ductus Arteriosus

**P. A. Gioffrè**
**A. Gaspardone**
**F. Crea**
275 Can the Frank–Starling Law be Applied to the Normal Heart?

**M. Jetté**
**W. Kottmann**
**F. Landry**
**G. Blümchen**
283 Effects of Isometric Stress (Handgrip) During Dynamic Exercise (Supine Cycling) on Left Ventricular Function

**P. S. Douglas** 291 Complex Dependence of Diastolic Function Indexes on Systolic Performance in the Canine Left Ventricle

**L. G. Tan**
**L. S. Berk**
**S . A. Tan** 299 Effects of Metyrosine, An Antihypertensive Medication for Pheochromocytoma, on the Pituitary and Adrenal Glands

**H. Kurozumi**
**Y. Yokota**
**T. Inoh**
**H. Fukuzaki** 309 Noninvasive Estimation of Myocardial Damage in Patients with Dilated Cardiomyopathy: Significance of Afterload

**P. V. Thadani** 317 Cardiovascular Toxicity of Cocaine: Underlying Mechanisms

**J. P. Morgan** 321 Cardiovascular Toxicity of Cocaine

*Book Review*

**J. H. Getzen** 323 *Electrocardiography of Arrhythmias,* Charles Fisch (Ed.)

---

Volume 5, Number 5 1990

Contents

**D. G. Penney** 325 Postnatal Modification of Cardiac Development: A Review

**W. M. DeCampli**
**J. C. Baldwin**
**R. C. Hagberg**
**D. M. Gaba**
**M. Maze** 339 Adrenergic Characteristics of the Pulmonary Artery "Baroreflex"

**F. Fontana**
**P. Bernardi**
**M. Orlandi**
**G. Bartolini**
**P. Puddu** 349 Evidence of a Role of Prostaglandins in Mediating the Diuretic and Hypotensive Effects of Atrial Natriuretic Factor

**M. Osbakken**
**N. Doliba**
**M. D. Mitchell**
**T. Ivanics**
**D. Zhang**
**A. Mayevsky**
357 Acetylcholine: Is it a Myocardial Metabolic Regulator?

**E. K. Seppet**
**L. Y. Kadaya**
**A. P. Kallikorm**
**V. A. Saks**
367 Hormone Regulation of Cardiac Energy Metabolism. II. The Effect of Thyroid State on the Coupling Between the Reactions of Oxidative Phosphorylation and Phosphocreatine Synthesis in Rat Heart Mitochondria

**S. R. Mittal**
**S. K. Arora**
**V. P. Mantri**
**S. Pamecha**
383 Echocardiographic Evaluation of Left Ventricular Function in Persons with Diastolic Blood Pressure Between 90 and 100 mmHg

**F. Z. Meerson**
389 Protective Effects of Adaptation

*Book Reviews*

**R. J. Bing**
405 *The Science and Practice of Pediatric Cardiology*, By A. Garson Jr., J. T. Bricker, and D. G. McNamara

**J. H. Getzen**
406 *Clinical Cardiology*, Edited by P. C. Gazes

---

Volume 5, Number 6 1990

Contents

**L. Eddy**
**R. Hurvitz**
**P. Hochstein**
409 A Protective Role for Ascorbate in Induced Ischemic Arrest Associated With Cardiopulmonary Bypass

**H. H. Holzgrefe**
**L. V. Buchanan**
**L. L. Heun**
**J. K. Gibson**
415 DPI 201-106 Selectively Enhances Function Recovery in Stunned, Reperfused Myocardium

**A. M. Katz**
427 Pathophysiology of Congestive Heart Failure

**W. P. Miller**
**B. P. Flygenring**
431 The Effect of Preload on End-Systolic Pressure–Wall Thickness Relations

**D. G. Penney**
443 A Critical Early Postnatal Period for the Stress-Induced Alteration of Heart Development: Persistent Cardiomegaly and Altered DNA Content

**M. R. Hoffmann**
**N. K. Menon**
**R. J. Bing**
455 Nitric Oxide as an Endothelium-Derived Relaxing Factor: Theoretical and Experimental Considerations

**A. Vajreswari**
**P. S. Rao**
**P. B. Tulpule**
461 Experimental Myocardial Lipidosis: Influence of Genetic-Dependent Differences in Response to Erucic Acid

**N. V. Karsanov**
**V. A. Magaldadze**
**G. V. Sukoyan**
**D. R. Tatulashvili**
**T. N. Macharashvili**
467 Energy Transformation Disturbances in the Myocardial Contractile Protein System: A Key Process in the Development of Acute and Chronic Heart Failure

*Book Reviews*

477 *Pleural Diseases,* by R. W. Light

477 *The Energetics of Muscular Contraction: Alive and Well,* Edited by R. J. Paul, G. Elzinga, and K. Yamada

479 *Sarcomeric and Non-Sarcomeric Muscles: Basic and Applied Research Prospects of the 90's,* Edited by U. Carraro

481 Volume 5 List of Contents and Author Index